

### Preparation of monolithic porous polymers in supercritical carbon dioxide

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Experimental study on the preparation of monolithic porous polymers in supercritical carbon dioxide has been carried out. Polymerization mixture composed of a cross-linking monomer, initiator and functional co-polymer was charged in the reactor with sapphire window, prior to pressurized by supercritical carbon dioxide. After the system was purged with a flow of CO<sub>2</sub> for 15 min, the reactor was pressured with liquid CO<sub>2</sub> and shook until the mixture had become fully homogeneous. The reactor was then heated to the required reaction conditions and left overnight. After cooling and CO<sub>2</sub> evacuation, the polymer was removed from the reactor as dry, white, continuous monoliths. The effects of experimental conditions(identity of monomer, monomer content, polymerization pressure, reaction time and method of CO<sub>2</sub> evacuation) on the physical properties of porous polymer were systematically examined.